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FEE TRANSMITTAL For FY 2005

Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT (\$ 500.00)

Complete if Known

Application Number	10/645,493-Conf. #8744
Filing Date	August 22, 2003
First Named Inventor	Maria Ronay
Examiner Name	Bryan R. Muller
Art Unit	3723
Attorney Docket No.	20140-00304-US1

METHOD OF PAYMENT (check all that apply)

Check Credit Card Money Order None Other (please identify): _____

Deposit Account Deposit Account Number: 50-0510 Deposit Account Name: IBM Corporation (Yorktown)

For the above-identified deposit account, the Director is hereby authorized to: (check all that apply)

Charge fee(s) indicated below Charge fee(s) indicated below, except for the filing fee

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FEE CALCULATION**1. BASIC FILING, SEARCH, AND EXAMINATION FEES**

<u>Application Type</u>	<u>FILING FEES</u>		<u>SEARCH FEES</u>		<u>EXAMINATION FEES</u>		<u>Fees Paid (\$)</u>
	<u>Fee (\$)</u>	<u>Small Entity</u>	<u>Fee (\$)</u>	<u>Small Entity</u>	<u>Fee (\$)</u>	<u>Small Entity</u>	
Utility	300	150	500	250	200	100	
Design	200	100	100	50	130	65	
Plant	200	100	300	150	160	80	
Reissue	300	150	500	250	600	300	
Provisional	200	100	0	0	0	0	

2. EXCESS CLAIM FEESFee Description

<u>Fee Description</u>	<u>Small Entity</u>	<u>Fee (\$)</u>	<u>Fee (\$)</u>
Each claim over 20 (including Reissues)		50	25
Each independent claim over 3 (including Reissues)		200	100
Multiple dependent claims		360	180

<u>Total Claims</u>	<u>Extra Claims</u>	<u>Fee (\$)</u>	<u>Fee Paid (\$)</u>	<u>Multiple Dependent Claims</u>	
36	- 36 =	x	=	<u>Fee (\$)</u>	<u>Fee Paid (\$)</u>

<u>Indep. Claims</u>	<u>Extra Claims</u>	<u>Fee (\$)</u>	<u>Fee Paid (\$)</u>		
2	- 3 =	x	=		

3. APPLICATION SIZE FEE

If the specification and drawings exceed 100 sheets of paper (excluding electronically filed sequence or computer listings under 37 CFR 1.52(e)), the application size fee due is \$250 (\$125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).

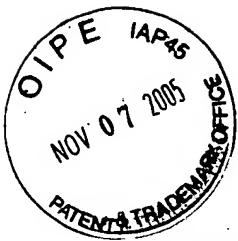
<u>Total Sheets</u>	<u>Extra Sheets</u>	<u>Number of each additional 50 or fraction thereof</u>	<u>Fee (\$)</u>	<u>Fee Paid (\$)</u>
	- 100 =	/50 (round up to a whole number) x	=	

4. OTHER FEE(S)

Non-English Specification, \$130 fee (no small entity discount)
Other (e.g., late filing surcharge): 1402 Filing a brief in support of an appeal 500.00

SUBMITTED BY

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Docket No.: Y0R920030195US1
20140-00304-US1
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Maria Ronay

Application No.: 10/645,493

Confirmation No.: 8744

Filed: August 22, 2003

Art Unit: 3723

For: LOW FRICTION PLANARIZING/POLISHING
PADS AND USE THEREOF

Examiner: MILLER, Bryan R

APPEAL BRIEF

MS Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

As required under § 41.37(a), this brief is filed within two months of the Notice of Appeal filed in this case on September 6, 2005, and is in furtherance of said Notice of Appeal.

The fees required under § 41.20(b)(2) are dealt with in the accompanying
TRANSMITTAL OF APPEAL BRIEF.

This brief contains items under the following headings as required by 37 C.F.R. § 41.37 and M.P.E.P. § 1206:

- | | | |
|------------|---|--|
| I. | Real Party In Interest | |
| II | Related Appeals and Interferences | |
| III. | Status of Claims | |
| IV. | Status of Amendments | |
| V. | Summary of Claimed Subject Matter | |
| VI. | Grounds of Rejection to be Reviewed on Appeal | |
| VII. | Argument | |
| VIII. | Claims | |
| IX. | Evidence | 11/08/2005-SZEWDIE1 00000140 500510 10645493 |
| X. | Related Proceedings | 01 FC:1402 500.00 DA |
| Appendix A | Claims | |
| Appendix B | Evidence | |

I. REAL PARTY IN INTEREST

The real party in interest for this appeal is:
International Business Machines Corporation.

II. RELATED APPEALS, INTERFERENCES, AND JUDICIAL PROCEEDINGS

There are no other appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in this appeal.

III. STATUS OF CLAIMS

A. Total Number of Claims in Application:

There are 36 claims pending in application.

B. Current Status of Claims:

1. Claims canceled: 0
2. Claims withdrawn from consideration but not canceled: 1-16
3. Claims pending: 1-36
4. Claims allowed: 0
5. Claims rejected: 17-36

C. Claims On Appeal

The claims on appeal are claims 17-36.

IV. STATUS OF AMENDMENTS

Applicant did not file an Amendment After Final Rejection.

V. SUMMARY OF CLAIMED SUBJECT MATTER

The present invention as stated in claim 17 is concerned with a method for planarizing a surface which is formed on a substrate which comprises providing on the surface to be planarized a

liquid polish slurry composition comprising abrasive particles; and contacting said surface with a polishing pad that consists essentially of a polymeric matrix and solid lubricant particles in an amount sufficient to reduce friction between the pad and surface during planarizing. See page 1, lines 7-10 and page 4, lines 1-4 of the specification.

According to claim 18, the solid lubricant particles comprise fluoropolymers selected from the group consisting of poly (tetrafluorethylene) ((PTFE), fluoroethylene-propylene copolymers (FEP), perfluoroalkoxy resins (PFA) ethylene-chlorotrifluoroethylene alternating copolymer (ECTFE), poly (vinylidene fluoride) PVDE and mixtures thereof. See page 5, lines 11-14 of the specification.

According to claim 19, the lubricant particles have a coefficient of friction of 0.03 to about 0.3. See page 5, lines 17-19 of the specification.

According to claim 20, the solid lubricant particles have a spherical shape, a cylindrical shape, or a platelet shape, and optionally contain cut fibers. See page 5, lines 20-21 of the specification.

According to claim 21, the size of the solid lubricant particles is about 0.05 to about 18 microns. See page 5, line 22 of the specification.

According to claim 22, wherein the size of the solid lubricant particles is about 0.05 to about 0.5 microns. See page 5, lines 22-23 of the specification.

According to claim 23, the organic fluoropolymers have a weight average molecular weight of about 1×10^5 to about 5×10^5 . See page 5, last two lines of the specification.

According to claim 25, the amount of solid lubricant particles is about 0.5 to about 30% by weight. See page 7, lines 1-2 of the specification.

According to claim 25, the amount of solid lubricant particles is about 0.5 to about 10% by weight. See page 7, lines 1-2 of the specification.

According to claim 26, the amount of the solid lubricant particles is about 2 to 3% by weight. See page 7, lines 1-3 of the specification.

According to claim 27, the solid lubricant particles are pretreated with a surfactant in an amount sufficient to disperse the lubricant particles in a planarizing slurry upon being detached from the pad during planarizing. See page 6, lines 6-14 of the specification.

According to claim 28, the polymeric matrix comprises at least one member selected from the group consisting of polyurethane, polycarbonate, polyamide, polysulfone, polyvinyl chloride,

polyacrylate, polymethacrylate, polyvinylalcohol, polyester and polyacrylamide. See page 6, lines 17-21 of the specification.

According to claim 29, the polymeric matrix is microporous. See page 6, line 17 and page 7, line 8 of the specification.

According to claim 30, the polymeric matrix is non-porous. See page 6, line 17 of the specification.

According to claim 31, the pad surface contains macroscopic channels before use and microscopic texture during use to facilitate slurry transport. See page 7, lines 14-16 of the specification.

According to claim 32, lubricant particles comprise at least one member selected from the group consisting of a binding agent, coupling agent or adhesive promoter. See page 6, lines 6-14 of the specification.

According to claim 33, the surface to be polished is selected from the group consisting of Al, Al alloys, Cu, Cu alloys, Ag, Ag-alloys, Au, Au alloys, W, W alloys, silicon oxide, polysilicon, silicon nitride, Ta, Ta alloys, Ti, Ti alloys, low-k dielectric and combinations thereof. See page 8, lines 1-5 of the specification.

According to claim 34, the surface to be polished contains at least one low-k dielectric selected from the group consisting low-k porous dielectric, low-k non-porous dielectric and air bridges and combinations thereof. See page 8, lines 6-14 of the specification.

According to claim 35, the low-k dielectric comprises at least one member selected from the group consisting of CVD carbon-doped silicon oxide, spin on organo silicate and spin on organic polymer. See page 8, lines 6-14 of the specification.

According to claim 36, the planarizing is chemical-mechanical polishing (CMP). See page 8, line 17 of the specification.

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

- A. Has the Examiner established that Claims 17-19, 21-23, 28, 33 and 36 are unpatentable under 35 USC 102(b) as being anticipated by U.S. Patent 6,283,829 to Molnar?
- B. Has the Examiner established that Claim 20 is unpatentable under 35 USC 103(a) as over U.S. Patent 6,390,890 to Molnar in view of U.S. Patent 5,714,700 to Nishida?
- C. Has the Examiner established that Claims 24-26 are unpatentable under 35 USC 103(a) over U.S. Patent 6,390,890 to Molnar in view of U.S. Patent 4,555,250 to Horie?
- D. Has the Examiner established that Claims 30 and 31 are unpatentable under 35 USC 103(a) as being unpatentable over U.S. Patent 6,390,890 to Molnar in view of U.S. Patent 5,489,233 to Cook?
- E. Has the Examiner established that Claim 32 is unpatentable under 35 USC 103(a) as being unpatentable over U.S. Patent 6,390,890 to Molnar in view of U.S. Patent 6,136,757 to Chiddick?
- F. Has the Examiner established that Claims 34 and 35 are unpatentable under 35 U.S.C. 103(a) as being unpatentable over US Patent 6,283,829 to Molnar in view of US Patent 6,390,890 to Molnar?

VII. ARGUMENT**A. Molnar does not anticipate Claims 17-19, 21-23, 28, 33 and 36**

Claims 17-19, 21-23, 28, 33 and 36 were rejected under 35 USC 102(b) as being anticipated by U.S. Patent 6,283,829 to Molnar. Molnar fails to anticipate the above claims. The present application is concerned with improving the topological selectivity of regular polishing pads which are used in conjunction with an abrasive slurry as contrasted to using a fixed abrasive finishing element or pad. According to the present invention, friction that develops during polishing between a polishing pad and a wafer is reduced by incorporating solid lubricant particles in the polishing pad.

The present invention makes possible increasing the topological selectivity of the planarizing/polishing. The present invention also makes possible the reduction of wafer delamination

(peeling) due to planarization/polishing, which is particularly important in planarizing conductor lines embedded in low-k (i.e. low dielectric constant) insulators or porous low-k insulators or planarizing the insulators themselves.

Molnar fails to anticipate the present invention since, among other things, Molnar does not disclose polishing pads that consists essentially of the polymeric matrix and solid lubricant particles. The present claims in reciting “consists essentially of” exclude the presence of materials such as abrasive particles in amounts that would materially change the basic characteristics of the claimed invention. See MPEP 2111.03. In particular, Molnar does not explicitly or inherently disclose a polishing pad that consists essentially of the polymeric matrix and solid lubricant particles. It should be noted that the pads used in the present invention are fundamentally different from those pads of the prior art that have fixed abrasive therein. For instance, see US Patent 5,958,794 to Bruxvoort (copy previously submitted) that discusses differences between fixed abrasive articles as contrasted to having the abrasives in the slurry.

The discussion in Molnar at column 29, lines 8-11 relied upon in the Office Action to support the conclusion of inherency has been taken somewhat out of context. In particular, this discussion in Molnar actually refers to the situation when the abrasive and lubricant are each in a finishing composition (e.g. – slurry) not in a finishing element (e.g. - pad). To properly understand, the discussion at column 29, lines 8-11, it is essential to take into account the discussion beginning at column 28, line 62 which states as follows:

Supplying lubricants in a fluid finishing composition generally offers improved control of lubrication at the operative finishing interface. Both the concentration and the feed rate of the lubricant can be controlled. If the lubricants are supplied in a first finishing composition free of abrasives and abrasives are supplied in a second finishing composition, then the lubricants, preferably organic lubricants, can be controlled separately and independently from any supplied abrasive. If the lubricants are supplied in a first finishing composition free of abrasives and abrasives are supplied in the finishing element finishing surface, then the lubricants, preferably lubricants, can be again controlled separately and independently from any supplied abrasive. Supplying lubricant separately and independently of the abrasive to the operative finishing interface is preferred because this improves finishing control.

There is no disclosure of a finishing element of the type employed according to the present invention.

Furthermore, Molnar suggests using either solid or liquid lubricants. Accordingly, to arrive at the present invention one would have to make fortuitous selections among a myriad of possibilities.

Furthermore, Molnar is actually concerned with a friction detector and method for semiconductor wafers and not with new innovative polishing pads. Accordingly, the discussion of Molnar related to finishing elements needs to be read with the understanding that the discussion merely relates to already known polishing pads and techniques. Molnar should not be read with the hindsight of the knowledge of the present invention.

It seems apparent that if Molnar had discovered the use of a polishing pad that deviated from the prior art such would have been explicitly disclosed therein. For instance, see US Patent 6,390,890 to Molnar (a later Molnar patent and cited in a prior Office Action) which is concerned with a finishing element.

Molnar fails to anticipate the present invention. In particular, anticipation requires the disclosure, in a prior art reference, of each and every recitation as set forth in the claims. See *Titanium Metals Corp. v. Banner*, 227 USPQ 773 (Fed. Cir. 1985), *Orthokinetics, Inc. v. Safety Travel Chairs, Inc.*, 1 USPQ2d 1081 (Fed. Cir. 1986), and *Akzo N.V. v. U.S. International Trade Commissioner*, 1 USPQ2d 1241 (Fed. Cir. 1986). Each and every claim recitation must be considered. See *Pac-Tec, Inc. v. Amerace Corp.* 14 USPQ2d 1871 (Fed. Cir. 1990) cert denied 502 US808 1991.

There must be no difference between the claimed invention and reference disclosure for an anticipation rejection under 35 U.S.C. 102. See *Scripps Clinic and Research Foundation v. Genetech, Inc.* 18 USPQ2d 1001 (CAFC 1991) and *Studiengesellschaft Kohle GmbH v. Dart Industries*, 220 USPQ 841 (CAFC 1984).

The law is well settled that claiming of a more specific combination within a broader group of possibilities avoids a lack of novelty rejection. The test for anticipation is whether the claims read on the prior art disclosure, not on what the references broadly teach.

For example, see *Akzo N.V. v. U.S. International Trade Commissioner* 1 USPQ2d 1241 (Fed. Cir. 1986). In Akzo, the court found that no anticipation exists when one would have had to “randomly pick and choose among a number of different polyamides, a plurality of solvents and a range of inherent viscosities” to reach the claimed invention.

Also see *In re Kollman et al.* 201 USPQ 193 (CCPA-1979) wherein the court held that the prior art generic disclosure contains “no suggestion of the required FENAC/diphenyl ether ratio”.

In Rem-Cru Titanium v. Watson, 112 USPQ 88 (D.D.C 1965, the prior art showed alloys having broad ranges which included the claimed ranges. However, the prior art did not explicitly disclose the more limited claimed ranges or alloys having the characteristics of the claimed alloy. Accordingly, the court held the claims to be allowable. For a similar factual pattern and same holding, please see *Becket v. Coe* (CA, Dc 1938) 38 USPQ2d and *Tarak v. Watson* (DC-DC 1954) 103 USPQ 78.

B. Molnar in view of Nishida does render obvious claim 20

Claim 20 was rejected under 35 USC 103(a) as being unpatentable over U.S. Patent 6,390,890 to Molnar in view of U.S. Patent 5,714,700 to Nishida. Nishida does not overcome the above discussed deficiencies of Molnar with respect to rendering unpatentable the present invention. Nishida was merely relied upon for disclosure of lubricant particles being spherical or of platelet form. Accordingly, claim 20 is patentable for at least those reasons as to why claim 17 is patentable.

C. Molnar in view of Horie does render obvious claims 24-26

Claims 24-26 were rejected under 35 USC 103(a) as being unpatentable over U.S. Patent 6,390,890 to Molnar in view of U.S. Patent 4,555,250 to Horie. Horie does not overcome the above discussed deficiencies of Molnar with respect to rendering unpatentable the present invention. Horie was relied upon for disclosure of using 1-5% by weight of a solid lubricant. However, Horie is not even properly combinable with Molnar since, among other things, Horie relates to glass grinding sheets from powdery metal compositions and not from polymer compositions. In addition claims 24-26 are patentable for at least those reasons as to why claim 17 is patentable.

D. Molnar in view of Cook does render obvious claim 27

Claims 27 was rejected under 35 USC 103(a) as being unpatentable over U.S. Patent 6,390,890 to Molnar in view of U.S. Patent 6,194,357 to Murata. Murata does not overcome the above discussed deficiencies of Molnar with respect to rendering unpatentable the present invention. Murata was merely relied upon for disclosure of using a surfactant in a water-borne lubricant in order to disperse a solid lubricant in the water. Accordingly, claim 27 is patentable for at least those reasons as to why claim 17 is patentable.

E. Molnar in view of Chiddick does render obvious claim 32

Claim 32 was rejected under 35 USC 103(a) as being unpatentable over U.S. Patent 6,390,890 to Molnar in view of U.S. Patent 6,136,757 to Chiddick. Chiddick does not overcome the above discussed deficiencies of Molnar with respect to rendering unpatentable the present invention. Chiddick was relied upon for disclosure of adding a binding aid to bind solid lubricants to metallic surfaces. Chiddick is not even properly combinable with Molnar since, among other things, Chiddick does not relate to polymeric compositions. Also, claim 32 is patentable for at least those reasons as to why claim 17 is patentable.

F. Molnar in view of US Patent 6,390,890 to Molnar does render obvious claim 34 and 35

Claims 34 and 35 were rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6,283,829 to Molnar in view of US Patent 6,390,890 to Molnar. US Patent 6,390,890 to Molnar does not overcome the above discussed deficiencies of US Patent 6,283,829 to Molnar with respect to rendering unpatentable the present invention. Molnar was merely relied upon for a disclosure of polishing low-k porous dielectric wafers and that the polymers and doped oxides are low-k dielectric materials.

In fact, if anything, Molnar teaches away from the present invention since US Patent 6,390,890 relates specifically to finishing elements and requires the abrasive to be fixed in the finishing element. Accordingly, claims 34 and 35 are patentable for at least those reasons as to why claim 17 is patentable.

The mere fact that cited art may be modified in the manner suggested by the Examiner does not make this modification obvious, unless the cited art suggest the desirability of the modification. No such suggestion appears in the cited art in this matter. The Board's attention is kindly directed to *In re Lee* 61 USPQ2d 1430 (Fed. Cir. 2002) *In re Dembicza et al.* 50 USPQ2d. 1614 (Fed. Cir. 1999), *In re Gordon*, 221 USPQ 1125 (Fed. Cir. 1984), *In re Laskowski*, 10 USPQ2d. 1397 (Fed. Cir. 1989) and *In re Fritch*, 23, USPQ2d. 1780 (Fed. Cir. 1992).

In Dembicza et al., supra, the Court at 1617 stated: "Our case law makes clear that the best defense against the subtle but powerful attraction of a hindsight-based obviousness analysis is rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references. See, e.g., C.R. Bard, Inc., v. M3 Sys., Inc., 157 F.3d. 1340, 1352, 48 USPQ2d. 1225, 1232 (Fed. Cir. 1998) (describing 'teaching or suggestion motivation [to combine]' as in 'essential

evidentiary component of an obviousness holding'), *In re Rouffet*, 149 F.3d 1350, 1359, 47 USPQ2d. 1453, 1459 (Fed. Cir. 1998) ('the Board must identify specifically...the reasons one of ordinary skill in the art would have been motivated to select the references and combine them');...".

Also, the cited art lacks the necessary direction or incentive to those of ordinary skill in the art to render the rejection under 35 USC 103 sustainable. The cited art fails to provide the cited degree of predictability of success of achieving the properties attainable by the present invention needed to sustain a rejection under 35 USC 103. See *Diversitech Corp. v. Century Steps, Inc.* 7 USPQ2d 1315 (Fed. Cir. 1988), *In re Mercier*, 185 USPQ 774 (CCPA 1975) and *In re Naylor*, 152 USPQ 106 (CCPA 1966).

Moreover, the properties of the subject matter and improvements which are inherent in the claimed subject matter and disclosed in the specification are to be considered when evaluating the question of obviousness under 35 USC 103. See *Gillette Co. v. S.C. Johnson & Son, Inc.*, 16 USPQ2d. 1923 (Fed. Cir. 1990), *In re Antonie*, 195, USPQ 6 (CCPA 1977), *In re Estes*, 164 USPQ (CCPA 1970), and *In re Papesch*, 137 USPQ 43 (CCPA 1963). No property can be ignored in determining patentability and comparing the claimed invention to the cited art. Along these lines, see *In re Papesch*, supra, *In re Burt et al*, 148 USPQ 548 (CCPA 1966), *In re Ward*, 141 USPQ 227 (CCPA 1964), and *In re Cescon*, 177 USPQ 264 (CCPA 1973).

VIII. CLAIMS

A copy of the claims involved in the present appeal is attached hereto as Appendix A. As indicated above, the claims in Appendix A do include the amendments filed by Applicant on February 22, 2005.

IX. EVIDENCE

Appendix B contains a copy of evidence pursuant to §§ 1.130, 1.131, or 1.132 or entered by or relied upon by the Examiner is being submitted.

X. RELATED PROCEEDINGS

No related proceedings are referenced in II. above, or copies of decisions in related proceedings are not provided, hence no Appendix is included.

XI. CONCLUSION

In view of the above comments, it is abundantly clear that the Primary Examiner has erred in the rejection of claims 17-36. Accordingly, it is requested that the Board reverse the Examiner's decision and allow the rejected claims 17-36.

Dated: 11-7-05

Respectfully submitted,

By 
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APPENDIX A

Claims Involved in the Appeal of Application Serial No. 10/645,493

17. A method for planarizing a surface which is formed on a substrate which comprises providing on the surface to be planarized a liquid polish slurry composition comprising abrasive particles; and contacting said surface with a polishing pad that consists essentially of a polymeric matrix and solid lubricant particles in an amount sufficient to reduce friction between the pad and surface during planarizing.
18. The method of claim 17, wherein the solid lubricant particles comprise fluoropolymers selected from the group consisting of poly (tetrafluoroethylene ((PTFE), fluoroethylene-propylene copolymers (FEP), perfluoroalkoxy resins (PFA) ethylene-chlorotrifluoroethylene alternating copolymer (ECTFE), poly (vinylidene fluoride) PVDE and mixtures thereof.
19. The method of claim 17, wherein the lubricant particles have a coefficient of friction of 0.03 to about 0.3.
20. The method of claim 17, wherein the solid lubricant particles have a spherical shape, a cylindrical shape, or a platelet shape, and optionally contain cut fibers.
21. The method of claim 17, wherein the size of the solid lubricant particles is about 0.05 to about 18 microns.
22. The method of claim 17, wherein the size of the solid lubricant particles is about 0.05 to about 0.5 microns.
23. The method of claim 18, wherein the organic fluoropolymers have a weight average molecular weight of about 1×10^5 to about 5×10^5 .

24. The method of claim 17, wherein the amount of solid lubricant particles is about 0.5 to about 30% by weight.

25. The method of claim 17 wherein the amount of solid lubricant particles is about 0.5 to about 10% by weight.

26. The method of claim 17, wherein the amount of the solid lubricant particles is about 2 to 3% by weight.

27. The method of claim 17, wherein the solid lubricant particles are pretreated with a surfactant in an amount sufficient to disperse the lubricant particles in a planarizing slurry upon being detached from the pad during planarizing.

28. The method of claim 17, wherein the polymeric matrix comprises at least one member selected from the group consisting of polyurethane, polycarbonate, polyamide, polysulfone, polyvinyl chloride, polyacrylate, polymethacrylate, polyvinylalcohol, polyester and polyacrylamide.

29. The method of claim 17, wherein the polymeric matrix is microporous.

30. The method of claim 17, wherein the polymeric matrix is non-porous.

31. The method of claim 17, wherein the pad surface contains macroscopic channels before use and microscopic texture during use to facilitate slurry transport.

32. The method of claim 17, wherein said lubricant particles comprises at least one member selected from the group consisting of a binding agent, coupling agent or adhesive promoter.

33. A method according to claim 17, wherein the surface to be polished is selected from the group consisting of Al, Al alloys, Cu, Cu alloys, Ag, Ag-alloys, Au, Au alloys, W, W alloys, silicon oxide, polysilicon, silicon nitride, Ta, Ta alloys, Ti, Ti alloys, low-k dielectric and combinations thereof.

34. A method according to claim 17, wherein the surface to be polished contains at least one low-k dielectric selected from the group consisting low-k porous dielectric, low-k non-porous dielectric and air bridges and combinations thereof.

35. A method according to claim 34 wherein said low-k dielectric comprises at least one member selected from the group consisting of CVD carbon-doped silicon oxide, spin on organo silicate and spin on organic polymer.

36. A method according to claim 17, wherein said planarizing is chemical-mechanical polishing (CMP).

APPENDIX B

A copy of the following Exhibit is attached:

Exhibit A: US Patent 5,958,794 to Bruxvoort et al. entered into record in the Response to Office Action dated December 2, 2004.